

REMARKS/ARGUMENTS

Claims 1-30 are pending in the application. In the above Office Action the Examiner has rejected claims 1-30. By this Amendment claims 1, 3, 5-7, 9, 10, 12-14, 15, 17, 19-21, 23-24 and 26-30 have been amended in order to more particularly define certain aspects of the present invention.

Rejection Under 35 U.S.C. §112

In the above Office Action, the Examiner has rejected claims 13, 14 and 21-23 under 35 U.S.C. §112, second paragraph, as being indefinite. Applicant has amended these claims per the suggestions of the Examiner, and thus respectfully submits that the pending claims are in compliance with 35 U.S.C. §112.

Rejection Under 35 U.S.C. §102(e)

In the above Office Action, the Examiner has rejected claims 1, 2, 4-6 and 10 under 35 U.S.C. §102(e) as being unpatentable over Joeressen et al.

As is discussed below, the invention as presently claimed operates upon an entirely different principle from that defining the operation of Joeressen's system. Specifically, the presently claimed invention contemplates the prediction of interference between signals transmitted in accordance with a first protocol of a first wireless network (or collection of devices) and signals transmitted in accordance with a second protocol of a second wireless network (or collection of devices). In particular embodiments the second protocol is a frequency hopping protocol and the predicted interference is determined by ascertaining the pseudo random frequency hopping pattern of the second protocol using signals received from devices governed by the second protocol. Once the predicted interference has been determined, various other embodiments of the invention contemplate that transmission in accordance with the second protocol is suspended in order to minimize or avoid occurrence of the predicted interference.

In contrast to the invention as presently claimed, Joeressen's system lacks any capability for predicting interference between first and second protocols. A principal reason Joeressen's system does not include this capability is that the timing of the mobile and LPRF networks in Joeressen's system is preferably synchronized; that is, Joeressen's system includes a pair of networks that are designed *a priori* to operate in a time-synchronized manner. This obviates the

need for any mechanism of interference detection based upon a received signaling characteristic. In Joeressen's preferred approach this time synchronization is established by effectively slaving the timing of the LPRF network to that of the mobile network, which precludes the possibility of interference between the networks once non-interfering transmit allocation patterns are imposed. Such a time-synchronized environment in which fixed allocation patterns are utilized differs markedly from the operative environment characterizing the exemplary embodiment of the invention, which includes a pair of entirely independent wireless networks (e.g., Bluetooth and IEEE 802.11(x)) not synchronized in time. Since in this exemplary embodiment the first and second wireless networks are not synchronized in time, it is possible that they will mutually interfere. This possibility provides at least one motivation for the prediction of interference between these networks based upon at least one received signaling characteristic in the manner defined by the pending claims.

The time-synchronized nature of Joerresen's is illustrated by the fact that the transmit/receive timing of the LPRF network within Joeressen's system is directly predicated upon the timing established by the mobile network 106. In particular, the timing established by the LPRF network merely comprises a shifted version of the timing established by the mobile network 106:

The LPRF network may be controlled by the mobile terminal acting as a master unit to maintain *synchronisation* of the two networks and to prevent simultaneous transmission by the mobile terminal 100 in the two networks. The controller 60 in the mobile terminal 100 can synchronize the two networks by shifting the LPRF timing relative to the mobile network. *This preferably aligns the timings.*

[Joeressen, 12:2-7, italics added]

Since in Joeressen's system the LPRF and mobile networks are preferably time-aligned, it is possible to define transmit allocation patterns to ensure that Joeressen's mobile terminal never simultaneously transmits in both networks. As mentioned above, the establishment of such allocation patterns removes any need for predicting interference in Joeressen's system based upon a characteristic of signals received from one of the networks in the manner contemplated by the present invention. One potential method for determining a transmit allocation pattern is described by Joeressen as follows:

One possible algorithm for determining an allocation pattern such that the mobile terminal does not transmit simultaneously in both networks will now be described. The control unit 80 is informed by the phone unit 62 when the mobile terminal 100 will next transmit and receive in the mobile network 106. Having identified the period of next transmission by the mobile terminal in the mobile network, the control unit 80 can create an allocation pattern by allocating any LPRF time slots which are wholly or partly contemporaneous with this period to transmission by the slave units in the LPRF network, that is reception by the mobile terminal (master unit). The remaining LPRF slots are then allocated to either transmission or reception by the mobile terminal in the LPRF network. Preferably, the LPRF network and mobile network are aligned so that an LPRF time slot begins at the end of the mobile slot in which the mobile terminal transmitted in the mobile network. This LPRF slot is preferably used by the mobile terminal 100 to transmit into the LPRF network.

[Joeressen, 12:9-22]

Because Joeressen's control unit 80 is informed by the phone unit 62 when transmission/reception will next occur within the mobile network 106, it is unnecessary for interference to be predicted between the mobile/LPRF networks based upon a characteristic of signals received from the mobile network in order to set up Joeressen's allocation patterns. Accordingly, Applicant respectfully submits that Joeressen does not describe or suggest the invention as defined by the pending claims 1, 2, 4-6 or 10, and hence respectfully requests reconsideration of the outstanding rejection under 35 U.S.C. §102(e).

Rejection Under 35 U.S.C. §103(a)

In the above Office Action, the Examiner has also rejected claims 13 and 14 under 35 U.S.C. §103(a) as being unpatentable over Joeressen in view of the Examiner's Official Notice. Because claims 13 and 14 are dependent upon amended claim 1 and because the Examiner's Official Notice does not remedy any of the deficiencies of Joeressen relative to amended claim 1, Applicant respectfully submits that claims 13 and 14 are not described or suggested by Joeressen in view of the Examiner's Official Notice. Reconsideration of the above outstanding rejection under 35 U.S.C. §103(a) is therefore requested.

Claims 3, 12 and 17 have also been rejected under 35 U.S.C. §103(a) as being unpatentable over Joeressen in view of Takahashi. A portion of the Examiner's stated rationale for this rejection is set forth below:

Regarding claim 3, Joerrson discloses the apparatus of claim 2, discloses an apparatus wherein the controller manager further includes logic to predict when interference with said second other apparatuses of said second wireless network will occur, but does not disclose prediction based on said ascertained pseudo random frequency hopping pattern.

Applicant respectfully submits that the Examiner has not identified any portion of Joeressen which describes "logic to predict when interference with said second other apparatuses of said second wireless network will occur". Moreover, it is observed that the amended independent claims contemplate predicting when interference will occur between signal transmissions in accordance with the first protocol and the second protocol based at least in part on a signaling characteristic *of signals received from the second wireless network*. As was discussed above, the creation of allocation patterns in Joerresen's system obviates the need to predict interference during operation of Joerresen's system by monitoring a characteristic (e.g., a frequency hopping pattern) of signals received during operation of Joerresen's system. Given that Joerresen's utilization of predefined allocation patterns effectively teaches away from predicting interference by monitoring received signals and dynamically adjusting transmit/receive activity based upon such predictions, any teaching of Takahashi relative to such interference prediction is irrelevant. That is, Joerresen's system would be incapable utilizing any interference predictions generated using the approach of Takahashi, since Joeressen's transmit and receive operations in the LPRF network are governed by a fixed allocation pattern. Accordingly, Applicant respectfully requests that the Examiner reconsider the outstanding rejection of claim 3. Since the rejection of claims 12, 17 and 26 are supported by the Examiner under similar rationale, Applicant respectfully requests that these rejections be reconsidered as well.

In the above Office Action the Examiner has also rejected claims 7-9, 21-23 and 30 under 35 U.S.C. §103(a) as being unpatentable over Joeressen in view of Finman. Applicant observes that these claims all depend from claim 1 or from other independent claims which have been similarly amended, and respectfully submits that the Finman does not remedy any of the above-described deficiencies of Joeressen with respect to the amended independent claims.

Accordingly, Applicant respectfully requests reconsideration of the outstanding rejection of claims 7-9, 21-23 and 30.

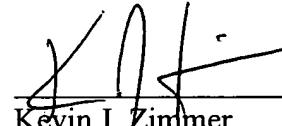
Applicant respectfully requests entry of the amendments described herein prior to further examination of the above-identified application. The undersigned would of course be available to discuss the present application with the Examiner if, in the opinion of the Examiner, such a discussion could lead to resolution of any outstanding issues.

Dated: March 1, 2004

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